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THE
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☞See advertisement on last page.

Poetry.

JOHN LITTLEJOHN.

BY CHARLES MACKAY.

John Littlejohn was staunch and strong,
Upright, and downright, scorning wrong:
He gave good weight, and paid his way,
He thought for himself, and said his say,
Whenever a rascal strove to pass,
Instead of silver, money or brass,
He took his hammer, and said with a frown,
" *The coin is spurious, nail it down.*"

John Littlejohn was firm and true,
You could not cheat him in "two and two,"
When foolish Arguers, might and main,
Darkened and twisted the light and plain,
He saw through the mazes of their speech
The simple truth beyond their reach;
And crushing their logic, said with a frown,
' *Your coin is spurious, nail it down.*"

John Littlejohn maintained the right,
Through storm and shine, in the World's despite;
When fools or quacks desired his vote,
Dosed him with arguments learnt by rote,
Or by coaxing, threats, or promises tried
To gain his support to the wrongful side,
" *Nay, nay,*" said John with an angry frown,
" *Your coin is spurious, nail it down.*"

When told that kings had a right divine,
And that the people were herds of swine,
That nobles alone were fit to rule,
That the poor were unimproved by school,
That ceaseless toil, was the proper fate
Of all but the wealthy and the great,
John shook his head, and swore with a frown,
" *The coin is spurious nail it down,*"

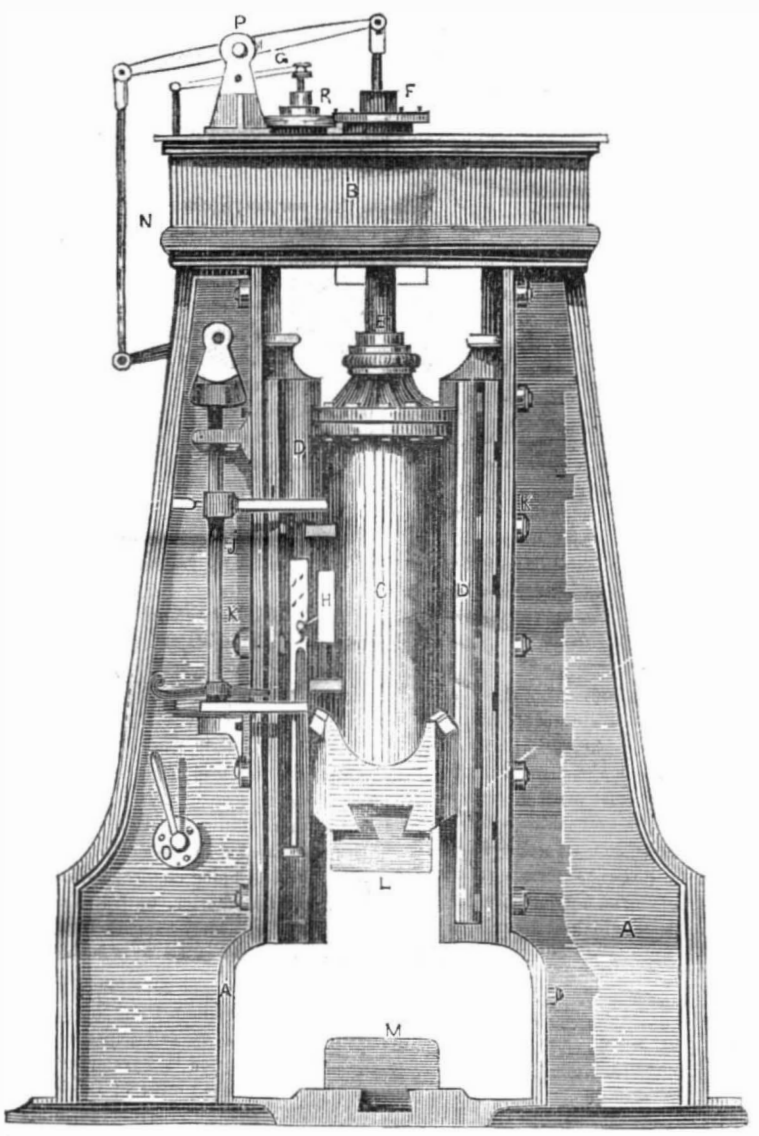
When told that events would justify,
A false and crooked policy.
That a decent hope of future good
Might excuse departure from rectitude,
That a lie of white, was of small offence,
To be forgiven by men of sense,
" *Nay, nay,*" said John, with a sigh and frown,
" *The coin is spurious, nail it down.*"

When told from the pulpit, or the press
That heaven was a place of exclusiveness,
That none but those, could enter there
Who knelt with the "orthodox" at prayer,
And held all virtues out of their pale
As idle works of no avail,
John's face grew dark, as he swore with a frown,
" *The coin is spurious, nail it down.*"

Whenever the world our eyes would blind
With false pretence of such a kind.
With humbug, cant, and bigotry,
Or a specious sham philosophy,
With wrong dressed up in the guise of right,
And darkness passing itself for light,
Let us imitate John, and exclaim with a frown
" *The coin is spurious, nail it down.*"

At the bottom of a lake the water must be heavier than at the surface, and if it be deep enough, there must be a point at which a stone will not sink below it, and this has given rise to stories of ponds without bottom, because the sounding stone could never find it.

STEAM HAMMER ENGINE.



This is an engraving representing a side elevation of an improvement in machinery for the manufacture of malleable iron invented by Mr. J. Condie, of Glasgow, Scotland, and recently patented in Britain. The nature of the invention is that of a steam hammer, but it differs from Napier's, and Lewis Kirk's, in one feature, viz. the piston is stationary and the cylinder is the hammer. We do not think that it is equal to Kirk's for a machine shop, but it possesses some novelty. In connection with the moveable cylinder, however, there is one useful improvement claimed by the inventor, that is, he has in combination with his cylinder hammer, malleable iron tubes which are connected with the hammers and anvils, for the purpose of throwing in jets of water to keep them cool. These pipes are not seen in the engraving, but the mentioning of them will we trust not be overlooked by some of our mechanics. As there are some arrangements which are not represented in this view of the invention, the reader must be satisfied with but a notice of the same.

DESCRIPTION.—A A, is the vertical standard frame bolted firmly to the floor B, is the cross head frame. C, is the moveable cylinder, on the butt of which is firmly attached the hammer L. D D are cylinder guides with flange fastenings bolted through the standard. E, is the piston rod, which is also the steam pipe, it being hollow and the steam admitted through it to the cylinder. F, is a stuffing box of steam way, and P N, the lever operated by an arm on the spindle J, which arm is lifted up and down by a motion rod H, on the cylinder, and through a slot on the frame a handle touches alternately the lever of the throttle valve and regulates the supply of the steam K K, are screw bolts, or shifting keys, for the purpose of fixing the flanges to the required guage. G R, is what the inventor calls his equilibrium throttle steam valve, and is connected with the steam way; by it can be regulated the speed and power of the hammer. M, is the anvil on which the iron is placed to be acted on by the hammer sliding up and down on the moveable cylinder. The steam is admitted between the piston and the bottom of the cylinder for the downward motion and between the piston and the top of the cylinder for the upward motion.

The claim of the inventor is for a moveable cylinder as applied to the manufacture of malleable iron, and also for malleable iron tubes introduced into hammers and anvils for conducting water to keep the hammers and anvils cool. The common mode of cooling the face of the anvil when a heavy piece of forging is under the trip hammer, is simply to pour on water from a bucket. The introduction of water by the tube is an improvement —the moveable cylinder, no doubt, gives a square blow, but it appears to us as being liable to much breakage, and therefore will be expensive.

The leech has the property of exhausting the air from the spot on which it fastens, then makes his bite, and the pressure of the air drives the blood into his mouth Cupping instruments are also applied on the same principle. The musquito understands the trade to a diamond shaving.

Cast steel requires to be hammered or rolled in order to render it fine and sound in its grain.

RAIL ROAD NEWS.

Michigan Central Railroad.

The Michigan Central Road, under the management of its Eastern owners, gives the amount of its last year's earnings as follows:

The total receipts from passengers during the last thirteen months, ending May, 31, 1848, were : : : $401,047 52
The expenses during this time 201,858 46

Leaving their net earnings at $199,189 06

The whole number of passengers who were passed over the Road, during that time was 80,231.

The road will soon be extended across the State. The grading is completed, and the road-bed ready for the superstructure.

The Commissioners of the Westchester and Philadelphia (Direct) Railroad have appointed Edward F. Gay, Esq., Engineer of the road, who will immediately proceed to survey one or more routes. A report from his hand will afford a full and reliable exposition of the business and profits, and of the cost and eligibility of the road. It is gratifying to observe the spirit with which this desirable enterprise is conducted. We shall look for the report with interest

Large Locomotive.

The New Castle Manufacturing Company have just completed a very large locomotive for the Baltimore and Ohio Railroad Company, which in power far surpasses ordinary engines, and is calculated to draw one thousand tons. It is called "Saturn." It weighs about twenty tons, and cost $60,000.

Items.

The Maine Railroad has reduced its passenger fare to nearly two cents per mile, and modifies the freight tariff in conformity. The Eastern has reduced its freight charge between Boston and Salem 20 per cent. In the Portland, Saco and Portsmouth railroad annual report, an intimation is given of a reduction, "the rates heretofore demanded having barely given interest on the outlay." In the year ending May, 31st, the gross receipts were $160,805 and the expenditures $101,580. The interest paid was $11,765, and the dividends, including that paid this month, $71,555, leaving a surplus of $18,250. For the previous year, a surplus of $1,803 only was realized.

The Lowell and Lawrence and the Stoneybrook Railroads have been opened with appropriate ceremonies.

The Southern Magnetic Telegraph.

The Southern line of Telegraph is in operation from New Orleans to Montgomery About 120 miles more are to be put up, in order to complete the line between New Orleans and Washington. This last link is being put up very rapidly, and if the instruments and operators arrive in due time, New Orleans will be in direct communication with Boston, and all intermediate places by the 15th July.

Items of Niagara Suspension Bridge.

Number of cables for bridge 16; number of strands in each cable 600; number of strands in the ferry cable, 37; diameter of the cable half an inch; height of stone tower, 68 feet 1 inch; height of wood tower for ferry, 50 feet; base of the tower 20 square feet; size at the top 11 square feet; span of the bridge 800 feet; whole weight of the bridge 650 tons; height from the water, 230 feet; depth of the water under the bridge, 350 feet.

For foot passengers it was to be ready last Tuesday.

A new vein of platinum has been discovered in France.

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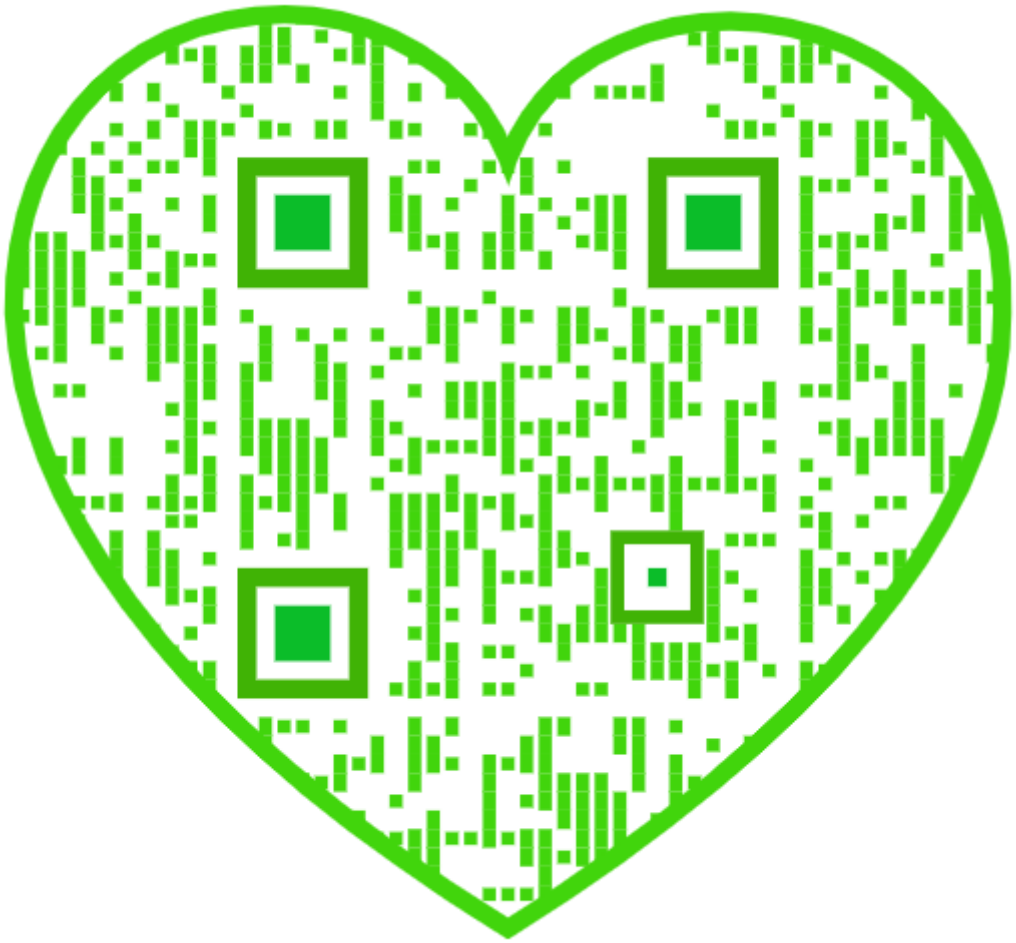

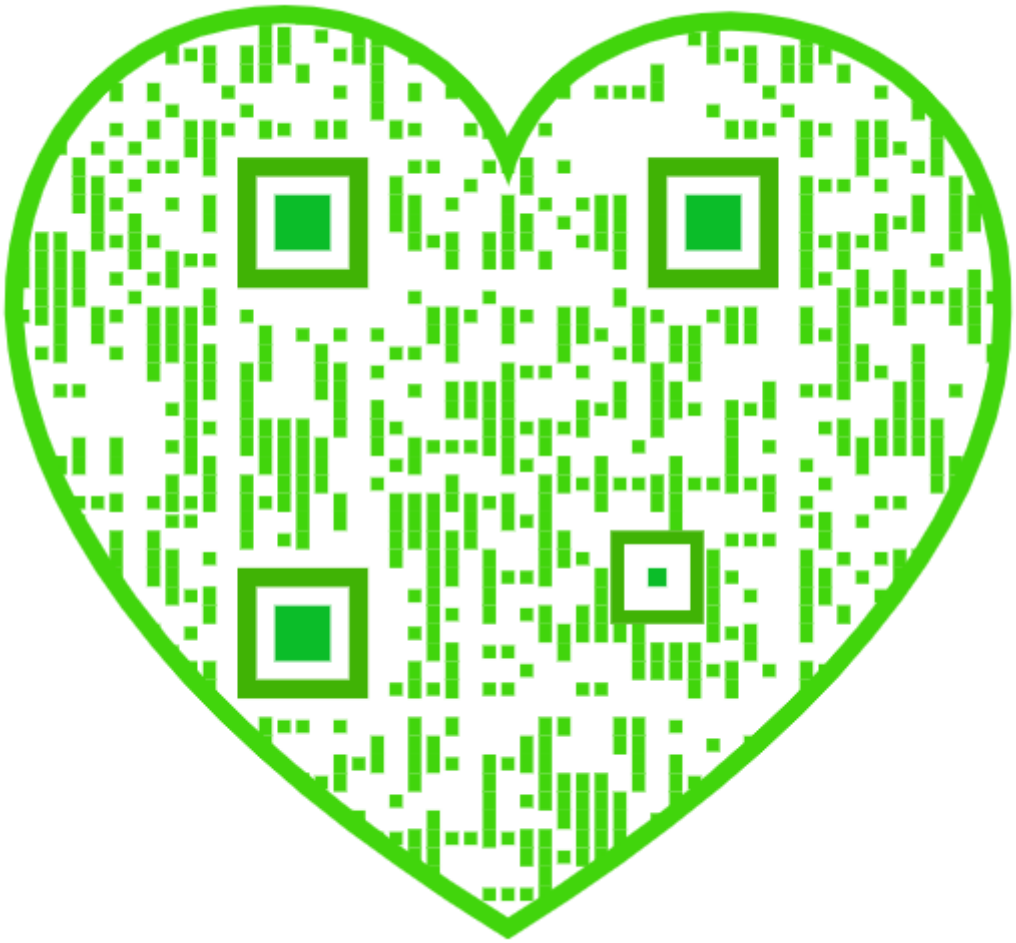

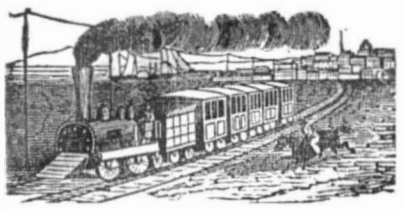

Latest Foreign News.

By the latest foreign news it is believed that a fearful tragedy of anarchy and bloodshed was being enacted in Paris. The soldiers of the Army and the National Guards were in fierce conflict with the populace and all communication between the city and country had been cut off. It is something to be deplored, but is not supposed to be doubtful. Free institutions can only be maintained by a people educated in virtue and a respect for law. The French are intelligent, but they are volatile and easily excited.

Ireland has not yet struck the blow : on the contrary, she is more peaceful. The clubs are numerous, but it is to be feared that much money will be thrown away on mere parade.

The crops in England look well.

The Harvest in France.

The Paris National states that, from all quarters, the most satisfactory accounts are received of the state end prospects of the harvest. All the journals of the interior repeat that the " oldest inhabitants," cannot remember a season so favorable to the fruits of the earth. The corn is strong and well advanced. The vines are covered with grapes and flowers. The grains are abundant, and already in many parts of the country it has been necessary to mow the artificial prairies where the luzerne, the sain-foin and clover begin to suffer from excess of vegetation.

Charges against the Commissioner of Patents.

Charges have been preferred against Commissioner Burke of the Patent Office by Thomas G. Clinton, Assistant Examiner. Among the charges is one against the Commissioner for publishing a letter in the Scientific American, over the signature of " Fiat Justitia," on the 27th of May last. There are no less than 21 charges, of a very serious nature. It would have been as well for Mr. Clinton to have kept out the charge of " furnishing statements" for the Scientific American, as this point is beyond his proof.

Infringement of a Patent.

A very interesting Patent case was decided in the U. S. Circuit Court at Boston, last week, before Justice Sprague. Chester Gorham was complainant against William Mixter, for the violation of a patent granted for a machine for pressing palm leaf hats. The case occupied the court for several days. The jury returned a verdict for the plaintiff and damages to the amount of $1000.

The Steamer United States.

This splendid vessel made her last passage out to Southampton in 12 days and 13 hours. She is evidently a superior vessel, and does honor to the mechanics who constructed her engines. After our mechanics have a little more experience in the practical of marine steam ships, a noble and superior fleet of New York built steam ships will be seen departing for all parts of the world from this port every week.

A Knotty Question.

A man puzzled himself with the following question—" What will be the consequence if an irresistable force should come in contact with an immovable body ?" To this question he answered—" I suppose it will knock a hole in it " A wit replied—" Knock a hole in what ?—the irresistable force, or the immoveable body ?" and added—" It is impossible to do such a thing to a force : and if the hole is knocked in the body, some part will give way, which will show that it is not immoveable."

Power of Water.

Water running takes a power to stop it equal to its own weight multiplied by its own velocity, which is also the law governing projectibles; upon the same principle is explained the method of raising water by means of the hydraulic ram.

Saving of Fuel in Gas Works.

At the last meeting of the Royal Scottish Society of Arts, Mr. W. Kemp stated that he had made a valuable discovery in economizing fuel at Galashiels Gas Works Where coal tar is burned, it has an injurious effect on the furnace bars and retorts, the greatest annoyance arising from the rapid clankering up of the furnace bars, to remove which, the fireman had frequently to throw water into the furnace, which caused the rapid destruction of the bars. To prevent this, the idea occurred to Mr. Kemp, of using the exhausted tan bark of the tan works, which had the desired effect. The force pump for injecting the tar into the furnace was next thrown aside, as it was found that the dry bark absorbed tar equal to its production at the works. His method is as follows :—The bark is dried and mixed with the coke of the gas coal, bulk for bulk : a pailfull of tar is thrown upon it, not quite so much as it will absorb, and it is then turned over. The mixture burns with a fine clear flame, attended with less smoke than formerly; the furnace bars, by remaining unclinkered, admit the oxygen freely for the combustion of the fuel. Where tan bark cannot be had, peat moss, loose and dry, makes a good substitute. Mr. Kemp stated that, in one year, £126 was saved in furnace coal.

Atmospheric Pressure.

Animals living upon mountains are found to have much larger lungs than those of the vallies. In the city of Mexico, which is several thousand feet above the level of the sea, consumption and pulmonary complaints are never found unless taken there, the air being much lighter, requires larger and better developed lungs in such places than in valleys, where they are contracted by the weight of the atmosphere. We are not apt to notice the weight of the atmosphere, which is equal to fifteen pounds to every square inch of the body, because it is equal in all directions.

This pressure also enables some animals and insects to walk up smooth surfaces, thus the fly has the power to form a vacuum under its feet, when the outward pressure holds it to the substance which it ascends, which is not the case with other insects; the cat and lion have this property to a limited extent.

Mammoth Bones.

The Memphis Eagle of the 16th inst., contains the following :—

" The huge carcass of a monster animal now extinct, was discovered in the Gayoso Boyou, in this city, one day last week, by a negro boy. The carcass lay projecting from the banks of the Bayou, about fifteen feet from the surface of the ground, and was doubtless deposited there before the Bayou was formed. The bones are said to be larger than any that have been found in Kentucky or elsewhere. They were very much decomposed, though portions of the ivory tusks, vertabraæ and other bones were taken out whole The two tusks, or five feet of them, lay side by side and measured twenty-two inches in circumference. It is unquestionably the frame of a monstrous species of gramniverous animal, existing probably anterior to the deluge, the history of which is unknown by us, even by any reliable tradition; their massive bones being the only revelation of their creation and perished existence. "

A Splendid Sewer.

An English gentleman has taken the contract for building a sewer in 42nd, street, this City. It is to run from west of 11th avenue, to ninth avenue, with branches north and south. The bottom is to be 8 inches thick laid on stone, and the arch from the hips up is to be twelve inches thick. The diameter of the sewer is to be 8 feet 6 inches, and have stone butments three feet wide. The whole cost will be about one hundred and forty thousand dollars.

Emigration from Great Britain.

Among the plans to reduce the redundant population of the British Islands, Lord Ashley has submitted a proposition to Parliament for taking 1000 boys and girls annually out of the ragged schools of the metropolis, and sending them, at the public expense, to the Australian colonies.

Holden's Dollar Magazine.

The August number of this public favorite is thus early in the field. We spoke highly of the July number, and from a comparison of the two can call attention to its successor in a more favorable manner. The August number contains no less than eight large engravings, including a magnificent view of Oxford, the size of a full page. Blenheim, the seat of the great Duke of Marlborough, and portraits of John Mitchell, the Irish Agitator, and Robert Holmes, his eloquent defender in the state trials. Besides these there are some dozen smaller engravings of various kinds, making in all about 20 or 22 engravings. The literary matter of this number is far superior to any of the preceding numbers, and entitles Holden's to the name of the Blackwood of America. The " Mysterious Huntsman," " American Notabilities," " Border Bullets," and quite a number of other articles, give evidence of this fact. We feel quite an interest in this, our favorite magazine, as it has developed the fact that a good, first class literary and illustrated magazine can be got up and afforded at *one dollar* as well as *three*, thus placing before our mechanics and working people choice literature at a price within their means. We certainly consider Holden's as a family magazine, the best in the country, and feel confident that it will ever maintain the high position it has in so short a time gained. Our country friends will see the benefit of clubbing together when they subscribe, as the price, which is nominally *one dollar a year* is not in reality over 80 cents, when a club of only $4 is raised. Besides this there is a premium of the " Illustrated History of the Hat," which is given to each subscriber for one year. Address Charles W. Holden, 109 Nassau st., N. Y.

A Freak of Lightning.

We learn from Washington that upon taking down the ball from the top of the lofty lantern, which was on the dome of the Capitol, it was discovered that it had been struck one or more times by lightning. The fluid had perforated it in three different places, and then, the ball being copper, apparently coursed round the interior, until it escaped out of a single hole, nearly opposite to where it entered. The ball is about 18 inches diameter

Paper Making.

It is no uncommon thing for some of our paper merchants to sell paper as it were to day, that was cotton rags yesterday. A better illustration of the power of steam could not be given, or of the progress of the age. The rags are placed in the duster, bleached, thence conveyed to the troughs, or vats, where in some kinds of paper) the sizing is mixed with the pulp, and from these vats the paper passes over heated rollers, and finally between two immensely heavy rollers, which give it the glazed surface, and it is then cut, folded, packed and sent to the Railroad; all in the course of a few hours. The telegraph enables New York merchants to order paper in Massachusetts at any moment, and receive the returns, manufactured, and even ruled, by the next steamer.

Greasing Carriage Wheels.

The best composition that can be prepared to relieve carriage wheels and machinery from friction, is composed of hog's lard, wheat flour, and black lead (plumbago.) The lard is to be melted over a gentle fire and the other ingredients—equal in weight,—may be added, till the composition is brought to a consistence of common paste, without raising the heat to boiling point. One trial of the paste will satisfy any one of its superior quality.

A Compliment to the Ladies.

A minister, a short time ago, held forth to his female auditors, the following :—

" Be not proud that your blessed Lord paid you the distinguished honor of appearing first to a female after the resurrection, for it was only done that the glad tidings might spread the sooner.

Stopped Work.

All the cotton factories of Pittsburg stopped work on Saturday, on account of " the ten hour law," which goes into effect tomorrow. They cannot compete with factories in other states, where no such law prevails.

Early Harvest.

The Rochester Democrat, says—" before the hay harvest is more than begun, some of the wheat fields in this vicinity are ready for cutting. The sickle was put into one yesterday. The grain fields look yellow and promising in all directions, and next week will be an active one with our farmers." The Auburn Advertiser, observes that the yield of wheat promises to be very considerable, though it was reported that the weavil is doing much damage in the northern part of the country.

Harvest has begun in Pennsylvania two weeks earlier than usual. The yield promises to be most abundant.

Magnificent View.

We are informed that grounds are selected to establish a Cemetary, situated partly in Kings County, and partly in Queen's County. The grounds front on the Brooklyn and Jamaica Turnpike, and extend over the hills. They embrace the variety of a level, cultivated plain, the high land and woods, with a view of the cities of New York, Brooklyn, and Williamsburg, the Atlantic Ocean, Rockaway, Sandy Hook, and Light, New Jersey and the Palisades on the North River.

Marrying a Deceased Wife's Sister.

The Court of Queen's Bench, England, has recently decided against the legality of all marrriages made with a deceased wife's sister. By this decision all such marriages are cancelled and declared null and void—the wives are placed in the light of concubines, the children of such marriages declared illegitimate, and all hereditary rights and claims to property totally abrogated.

Caution to House Keepers.

A family in Lancaster county, Pa., were, a few days since, made very ill, by eating of a sponge cake, flavored too highly with " peach water." We beg our young housekeepers to beware how they use this very agreeable and common addition to pies, confectionary, &c., as it is but a mild form of that deadly poison—Prussic acid.

Napoleon's Jailor.

Sir Hudson Low's defence of his conduct to Napoleon, is about to be published in England. The deceased jailor of the Emperor has left behind him twenty-seven volumes of manuscript memoranda of his conversation with Napoleon and his staff.

A Feat.

One of the hands on a North River steamer recently rode on the walking-beam, from Sing Sing to New York, at the rate of twenty miles an hour. The piston had fourteen feet stroke and the rider rose and fell that distance, with a velocity enough to make a spectators head ache.

"Laying to" on the Erie Canal.

The Albany Knickerbocker says, the wind blew so a few nights ago, that the boats on the Jordan Level had to " lay to."—As some of our readers may not know how this nautical feat is performed on the canal, we would state that a horse is fastened to each end of the boat and wallopped till the storm abates, or the vessel breaks in two in the middle.

Subterranean Stream.

The Hadley Falls Company, in excavating their new raceway, cut into a subterranean stream, large enough to carry a mill, flowing down the Connecticut, thirty or forty feet below the level of the railroad.

Increased Commerce.

The number of foreign arrivals of vessels at the port of Boston for the six months elapsed since Jan. 1, 1848, has been 1390—being an increase of 256 over the corresponding period of last year.

New Flour.

Several of the Millers of Washington county, Md., have already commenced the manufacture of flour from new wheat. This is something earlier than the editor of the Times recollects of having ever heard of the like being done before.

Death from Tobacco.

A young man in Springfield, Mass., lost his life a short time since by swallowing a large chew of tobacco during his sleep.

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The Past and the Present.

Let us cast a glance on the world around us. You know that even now many tracts of the earth's surface are still covered with putrid morasses and impenetrable forests, the cold and damp atmosphere of which gives birth to noxious insects, and breathes forth devastating epidemics ; which are almost entirely the dwelling place of the savage, and only afford to the few creatures in human form who are to be found in them, the means of dragging on a dull and joyless existence, without freedom, usefulness or dignity. History informs us that the countries which we inhabit at the present day bore the same character formerly, to a large extent. Now, the morasses are dried up ; the forests cleared out, and changed into fruitful plains and vineyards, which purify the air and fill it with an enlivening fragrance ; the rivers are taught to keep their channels, and enduring bridges are laid across them ; villages and towns have arisen, with lasting, convenient and agreeable dwelling places for men, and public buildings which have already braved the storms of centuries, for the purposes of mental improvement and elevation. You know that even at the present day, savage hordes roam over vast wildernesses, sustaining a miserable life upon impure and loathsome food, and yet, when they encounter each other, engaging in warfare for the sake of this scanty subsistence and of their wretched implements of acquisition and enjoyment,—extending the fury of their vengeance even to the destruction of their fellow men. It is in the highest degree probable that we are all of us descendants of such races ; that our forefathers, at least in some of their generations, have passed through this condition Now, men are assembled from out the forests, and united together in masses. In the savage state, each family had to provide for its manifold wants immediately and without assistance from others, and had even to fabricate for itself the utensils for that purpose, with much loss of time and waste of energy :—Now, the human multitudes are divided into classes, each of which pursues its own profession, to the acquirement an exercise of which its life is devoted ; providing in its own department for all other classes, and provided for by them with respect to all its other wants ; and thus are the forces of nature confronted by the greatest possible amount of the cultivated, ordered, and combined powers of reason. The laws and their administrators interpose an insuperable barrier to the fury of personal warfare and spoliation ; quarrels are adjusted without bloodshed and the lust of crime is scared, even in the dark recesses of thought, by severe punishments ; and thus is internal peace secured, and every one moves in safety within the limits which are prescribed to him. Large masses of men, frequently spring from the most dissimilar origin, and united one scarce knows how, encounter similar masses in as wonderful combination, and neither being fully acquainted with the power of the other, reciprocal fear steps in between them, so that men are sometimes blessed even with external tranquility ; or when it does come to war the superior power is often weakened and worn out by by the determined resistance of its opponent, and instead of the secretly desired extermination, peace is the result ; and thus has sprung up a kind of international law between independent countries, and from opposing tribes a kind of republic of nations has arisen. We know how, even to the present time, the timid savage, unacquainted even with himself, finds a hindrance or a destroying foe in every power of nature. To us science has laid open our own spiritual being, and thereby, in a great measure, subjected to our will the outward physical forces of the universe. Mechanics have multiplied almost to infinity, the feeble powers of man, and continue to multiply them. Chemistry has introduced us into many chambers of the secret workshop of nature, and enabled us to apply her wonders to our own uses, and to protect ourselves from the injuries they might otherwise inflict upon us. Astronomy has scaled the heavens for us and measured their paths·

The number of vessels constructed last year for the internal navigation of Russia was 11,990.

Coal for Fuel in Western Steamboats.

A letter from Prof. Walter R. Johnston, of Philadelphia, is published in the Louisville Courier, on the use of coal on the Western Rivers, for fuel. He says—

As to the question of the relative value of coal, compared with dry beach, ash, and cot ton wood, I am not aware that any direct experiments on the latter kinds of wood, have as yet furnished the data for computing that relation. You may have observed that in my report on coals, I have stated that the subject is yet unexhausted, and particularly that the coals of the West and Southwest, were but very imperfectly represented in the series of samples sent for trial in 1843. Mr. Bull, who made experiments on the woods some twenty-five years ago, also experimented on certain coals, and obtained comparative results between weights of coal and cords of wood. But the western coals, those of Illinois, Indiana, and Kentucky, were not, I think, then brought into notice, and I am under the impression that cotton wood was not among the kinds submitted to trial by him. One object I had in view in requesting the Government to continue the experiments on coal, was to perform at the West a second series of trials on the coals and woods found on the Western lakes and rivers. From all that I do know of the Western Coals, and from all that I have learned from others, of the wood of the Western country, I do not entertain a doubt as to the great economy of using coal wherever it can be had at a moderate price.

It is very certain, that with such prices as have hitherto ruled on the Ohio and its branches, one could hardly suppose that any other fuel than coal would be used, if the trips were confined to the coal region, or to a moderate distance beyond it.

The grates for using coal will in general be of less depth than those for the use of wood ; the bars will be from one half to three quarters of an inch apart. But for different coals different dimensions of grates will be required. I suppose one difficulty experienced on the Western boats will arise from the attempt to burn too much coal at a time on the bars, by which means the fire will become over-heated and fused, and if the clinker be also heated to the fusing point, the sulphur will attack the iron and run into compact masses with it, preventing the clearing of the fire. A thin stratum of coal on a grate raised to within a few inches of the bottom of the boiler, will probably be found the most advantageous mode both for the economy of grate bars, and for that of fuel. If the boilers do not make steam as rapidly as with wood, the obvious expedient is not to increase the depth of the stratum of coal, but to enlarge the area of the grate

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Beautiful Ornithological Display.

An Illinois paper mentions a fine collection of birds all taken from the Illinois praries and waters, which numbers some four hundred varieties, of various sizes and colors, ranging from the swan down to the humming bird. So carefully and nicely were they preserved, that they had every appearance of life.

Beside birds, there were many kinds of reptiles, quadrupeds, and other "creeping things," which live upon, and burrow in the wide spread praries. A visit to this museum is characterized as a cheap way indeed to see a great and beautiful variety of the warbling and creeping tribe which populate the Western country. The proprietor is on his way south, where he intends making a large addition to his museum, and afterwards the Eastern States are to see the sight.

Man's Friends.

Man has three friends in this world—how do they conduct themselves in the hour of death, when God summons him before his tribunal? Money, his best friend leaves him first, and goes not with him. His relations and friends accompany him to the threshold of the grave, and then return to their homes. The third, which he often forgets during his life, are his good works. They alone accompany him to the throne of the Judge—they go before him—speak, and obtain mercy, and pardon for him.

Thrashing by Music.

A modern traveller in Germany gives an amusing account of the manner in which grain is thrashed there—a business, to be expert in which, one would think, must require a master for instruction, as much as any other art or accomplishment. It is not unusual for pedagogues in thrashing idle urchins, to lay on the blows in regular crescendo, running up through all the gradations to the loftiest "staccato," but we never heard of musical harmony being introduced into grain-thrashing before. Yet, after all, what is the story of Amphion building Thebes by the shakes of his hurdy gurdy, but an allegorical illustration of the same benefit of lightening labor by music !

But to our extract. "The Germans," says the writer, "thrash with a perfect regard to time, in all the alterations of tripple and common measure, making the transition from one to the other with the greatest exactness —there are sometimes no fewer than seven or eight: when it is a simple quarter, and one of the performers happens to drop out, which is frequently the case, the transition is immediately, and without the least interruption into triplets. Occasionally the effect is graced by some very delicate gradations of forte and piano, raliemando, crescendo, morcendo, accellerando,—and the whole executed with as much precision as if a note-book lay before each. When the piano is to be particularly delicate, the tips of the flails are used, which affords an opportunity of combining grace with dexterity, it is then the merest, scarcely audible tap, and costs the least possible effort. Then comes the crescendo, swelling into a tremendous barn-echoing staccato—downright thrashing in fact, and what I particularly wish to enforce upon the farmer, the flail, the whole movement is never raised higher than the head, which I could not help especially taking note of, for the good of our practical agriculturists, when I recollect how much unnecessary brawn is expended on our thrashing floors to no purpose. Thus we see his genius for music never forsakes the German in any situation or occupation of life, it follows him to his commonest employments, and no doubt to their advantage, on the principle of "studio fallere laborem," in making it in all similar exertions, an arithmetical operation.

Cunning of the Fox.

The cunning of the fox has indeed been ever proverbial, and, even so long since the days of Æsop, he figures as the chief personifier of that quality. But, in many of the instances which had been related, we cannot refuse it the higher appellation of wisdom, as possessing the excellency implied in the definition of its being the "means best adapted to the ends most conducive of its own well being." The following instance is illustrative of the remark of Pliny, that no degree of taming will entirely divest the animal of its ancestry. A fox had been partially tamed and was kept fastened by a chain to a post in a court yard, where he was chiefly fed with boiled potatoes. But the animal seems to have thought that a desirable addition might be made to his fare from the numerous fowls that strutted around him, but whose caution kept them beyond the reach of so formidable an enemy. His measures were soon taken; and having bruised and scattered the boiled potatoes which he had received for his dinner at the extremity of the space which the length of his chain enabled him to command, he retired, in an opposite direction, to the full extent of his chain, and assumed the appearance of utter regardlesness of all that was passing around him. The stratagem succeeded; and when some of the fowls had been thrown so much out of their guard as to intrude within the circle of danger, the fox sprung from his lurking place, and seized his prey. The habits of cautiousness displayed by this animal are also significant of conclusions drawn by observation from experience. For, when followed by dogs, it will not run through a gate—though this is obviously the most ready passage: nor in crossing a hedge will it prefer a smooth and even part—but the roughest, where thorns and briars abound, and when it mounts an eminence, it proceeds obliquely, and not straight forward. And whether we suppose these actions to proceed from a desire to avoid those places where traps may probably have been laid, or from knowing that his pursuers will exactly follow his footsteps, and he has resolved to lead them through as many obstacles as possible, —in either case an estimation of causes and consequences are to be discerned

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A Hanging Bridge.

A late number of the Journal des Debats describes in the following manner the opening of the hanging bridge of Kerentrech, which is spoken of as one of the most remarkable objects of modern art in France. It is thrown over the little river Scorfi, at the place where it crosses the road from Lorient to Paris, at the bottom of the beautiful avenue of Chazelles. The bridge differs from all those which have been heretofore built, inasmuch as its power of suspension rests entirely on cables of iron wire. The total length of the bridge between the pedestals which cover the anchoring galleries, is 292 metres, that of the flooring, 179 metres, 50 centimetres, its width 6 metres, thirty centimetres, of which 4 metres 90 centimetres are for the carriage way, and 70 centimetres for each foot path.

The flooring is composed of 146 small timbers, finished at the ends with bronze, covered over by a double planking of pine boards; it is suspended by cords of iron gracefully disposed, four cables of iron wire of 16 centimetres diameter, reposing on elegant masonry porticoes of 17 metres height over the road.

Each cable is formed of 1,650 iron wires of 340 metres length, the wires present thus a development of 2,214,000 metres, or 561 post leagues, the distance which the workmen employed in arranging them have been obliged to pass over several times. The cables surround the anchorage posts, and form of themselves only one and the same cable which is wound four times about itself Each cable could, without breaking, be submitted to a tension of 800,000 killograms; the tension was carried, at the moment of the trial, to 200,000 killograms; in common times, it would not exceed 140,000 killograms, and a single cable might thus bear the whole of the bridge.

This bridge of Kerentrech, combines in the highest degree, all the qualities of elegance, precision, and solidity, which distinguish the most beautiful hanging bridges, and nothing can give a higher idea of the care bestowed on the building it, than the fact that not a single wire broke on the trial, that not a bolt or a timber has bent.

The construction of this bridge is the work of the skillful engineer, M. Leclerc, to whom the city of Lorient is also indebted for its magnificent dock, in the building of which so many before him had failed. M. Leclerc was admirably seconded by a young and skillful engineer, M. Noyon, whose care and attention has contributed much to the success of this magnificent work. Trees set out at the entrance of the bridge, and sphinxes of collossal dimensions placed on the anchorage pillars, will complete the monumental aspect, but these additions would cost 30,000 francs, and must be waited for till better times.

Gases.

In breathing air we use the oxygen, and send it out carbonic acid gas, which is heavier than the atmosphere, and sinks, passing into plants and vegetables.

Carbonic acid gas also exists in great quantities in some caves and valleys, rendering them incapable of supporting life, and this property has often been attributed to some plants, as upas, &c.

Hydrogen gas is one-fourteenth the weight of air, and has peculiar properties. It is so light, and the particles so minute that it is difficult to make a substance that will contain it, and it is found to be retained in balloons better by mixing it with carbon, making carburetted hydrogen.

Watch Chain.

A small watch key chain, six inches long, contains ordinarily 42 rivets and 63 links in every inch, in all 630 pieces, and yet the entire chain will weigh only one grain and three quarters.

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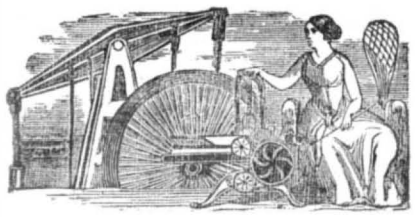


New Inventions.

New Counting Machine and Indicator.

Mr. James Stone, of Broadway, this city, has invented a very beautiful and neat Indicator or counting machine, to be applied to a carriage, steam engine or printing press, to tell the number of revolutions of a shaft or wheel, or the number of copies of a newspaper printed. The instrument is not above three inches long and two inches broad. It has no dials but has six separate circular couplings fixed on a spur spindle, and these couplings are figured around their peripheries—the first coupling having a rocking shaft attached and connected with a shaft or wheel, &c. of whatever is wanted to be registered, which moves one figure for every revolution and for a whole revolution of the first coupling or ten revolutions of the shaft, one figure of the second coupling or small revolving circle is moved—in other words, one whole revolution of the second coupling indicates 100 revolutions of the shaft or wheel, and the third coupling indicates only 1, and thus in geometrical progression the 6 small cylinder couplings will record 1,000,000 revolutions. The whole of the figures on the couplings are seen in a row through a slot in the face of the indicator. Thus the small instrument attached to the wheel of a carriage three feet in circumference will register 1,000,000 yards,

$$\frac{1,000,000}{1760} = 567\ 11\text{-}13 \text{ miles.}$$

It is the best and neatest Indicator of the kind, we believe, that has yet been brought forward, and is far superior to the Viometers sold in London, and described in our last number.

Separating the Hull of Wheat.

A patent was lately taken out for a new mode of hulling wheat. It simply consists in passing the wheat or grain through a jet of steam in any convenient manner, so that each grain shall be thoroughly acted upon by the steam which gives to the hull such toughness that it is not pulverized by the action of the stones in the grinding, but it peels off in large flakes. J. W. Howlet and F. M. Walker, are the patentees.

It is well known that when grain is ground in too dry a state, the hull is so brittle that a portion of it is pulverized and passes through the bolter with the flour, thus reducing its mercantile value. This invention then removes this difficulty, for the steam toughens the hull so that it peels off most beautifully and allows all that can be converted into fine flour to pass through the bolter, while the hull like a thin membrane is completely separated.

New Carding Machine.

The Newark Herald states, that Mr. John Daggett of that place, has invented an improved carding machine, which is to perform four times the work done by any other double carding machine in use. The machinery is so arranged that it will card the wool and produce four rolls as easily and as quickly as a common machine produces one. It requires one more power for its motion than that used to impel an ordinary machine but does not take up as much room upon the floor.

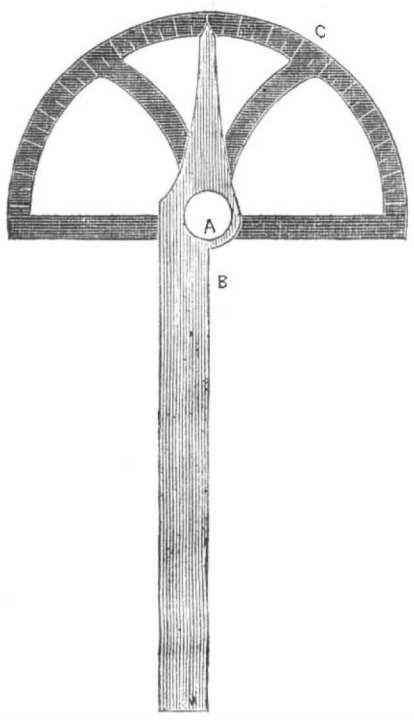
Carving by Machinery.

A valuable patent has been secured in England for a new improvement in carving by machinery, invented by a William Jordan, a Scotch artist, of which the following is a brief description :

The machine consists of two parts, each having its own peculiar movement quite independent of each other, but each capable of acting simultaneously and in unison with the other. The first or horizontal part is the bed plate and floating table, on which the work and the pattern is fixed, and all the motions of which except the revolution of the cutters, is vertical. Let us now suppose that we have an horizontal table capable of moving about in every possible direction in its own plane, and that we have a point over that table capable of moving in a vertical line only. If the point remains fixed and in contact with the table while moving over the curves and right lines, lines corresponding with these movements will be described on the table, in the same manner they would have been had the table been fixed and the point moved; but if, while these horizontal movements are going on, we add the vertical movement of the point, we then trace a solid figure, which has for its plane the outline described by the vertical motion of the point. This may be better illustrated by taking any simple solid form and moving it horizontally, while it is traced by a point moving vertically.

We believe that the inventor is now in this country endeavoring to sell his invention. It is our opinion, however, that there are some points about it similar to some machines patented in this country.

Trigonometrical Bevil and Rule.



This is a very neat instrument for many useful purposes invented by Messrs. Hooper and Billings, of Worcester, Mass. Every mechanic will by the above engraving know and appreciate its worth, and no artist or mechanic should be without one. A, is a screw pivot by which the rule B, is attached and connected with the bevel C. It is a most excellent instrument to mitre degrees upon all circular work, and answers the purpose of a T square. The flutings of columns, the sides of iron nuts, &c. can all be found out by this instrument in the most easy manner. The index pointer indicates the line of the Rule and as the whole instrument is made of metal, there is no fear of warping and getting out of line. The Rule moves on the pivot and the pointer is shifted to any degree on the bevel, so that as a mitre it is very useful in laying out either iron or wood work.

Measures have been taken to secure a patent. At present they are manufactured by J. N. Billings, Worcester, Mass., and sold by W. N. Seymour & Co., No. 4 Chatham Square, in this city.

New Surveying Instrument.

Mr. Alexander Walker, a gardener at Mayor, in the north of Scotland, has invented a machine for measuring heights and distances, land surveying, levelling, &c. It solves the various problems in trigonometrical and triangular measurement, in such a short space of time, and with so little calculation to the operator, as entirely to supersede the use of the theodelite, circumferenter, plane table and various other instruments hitherto in use—the grand principle being, that it is a "self calculator," requiring scarcely the aid of a pen or pencil from the operator. By this machine a field, it is said, may be measured, and the plan of the same laid down from the centre or any convenient place, either within the boundaries of the field, or from a distance without the limits of the ground, provided a view of the margin of the same, or even the angles or corners be within sight of the surveyor. Another purpose to which it can be readily appplied, is laying the line of roads or railways, canals, water courses, &c. It can also show the depth of cut required on any eminence or hill that may be in the route In the topographical department this instrument may be of the greatest value to an army, in finding the distance to the walls of any fort that may be unapproachable, and the height of the same may be taken instantly without quitting the camp.

Universal Orrery Globe.

Mr. J. D. Hales, of Linton, England, has secured a patent for a new kind of Orrery Globe, which is to eclipse all the works ever produced by ancient or modern astronomers. For three years Mr. Hales challenged the astronomical world to meet him in London under the forfeiture of one thousand pounds, to discuss and prove the precise period of Joshua's miracle of the sun standing still; also the true principle of the magnet and what its variations would be for the next thousand years, &c. No one took up his challenge, so he has now registered his astronomical apparatus in the London Patent Office, by which he can tell accurately all the past and future eclipses of sun and moon—"every eclipse that will happen to the end of time,"—the increase and decrease of latitude, with change of variation of the magnet, and a great number of other important astronomical particulars, mooted and unmooted. If the instrument, which is two curiously constructed and arranged globes, be all that the inventor and patentee represents them to be, his invention certainly must be esteemed the most wonderful invention of the day.

New Electric Patent.

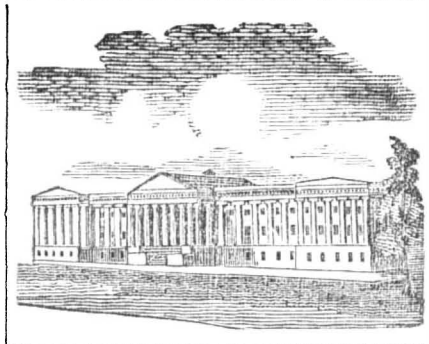
John Cross Roberts of Flintshire, England, has patented a simplified and improved mode of communicating intelligence by means of electricity and magnetism, combined or not with steam, on railways between the carriages on the line, and the engine or tender, so that the guards and passengers may give notice to the engineer or engine driver, for the prevention of accidents or casualties, or the mitigation of the evils thereof, and the protection of human life and property from loss or injury, and also of communicating signals by the same agency, describing the cause or causes of alarm; and a new mode of securing the passage of electricity for the above purposes to be submitted or not for the side chains and of communicating intelligence between distant places on the line.

New Process for Preserving Wood.

Liebig allows that it is the constant action of the oxygen of the atmosphere which penetrating into the heart of wood by absorption and infiltration that produce on the elementary fibres a slow combustion which destroys the wood. By some this is called dry rot.—It is said that these elements of wood destruction enter only by the ends of the wood, hence some suppose that if these elements were prevented from entering the ends of wood it would be preserved for an almost indefinite period. To prevent then the entrance of this slow combustion agent, two ingenious Frenchmen, Messrs. Hutin and Boutigny, dry the ends of the wood they wish to preserve and dip them into naphtha or oil. The ends are then set on fire and when burned for some time are dipped into boiling pitch which hermetically seals up the the pores of the ends of the wood and prevents decomposition. It has frequently been observed that the small worm-eaten holes in decayed wood run as it were in longitudinal streaks or upwards from the ends of the timber. Charring itself has long been known to be a good preservative of piles, but in this process both charring and hermetically sealing is practised, and for piles, sleepers, posts, &c. the result may be predicted to be perfectly successful.

Glass Water Pipes.

We perceive by a late English paper that at a recent meeting of the Plymouth Town Council, it was determined to lay down glass water pipes in that town. In some important respects glass must have great advantages over lead, iron, or gutta percha.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending July 5, 1848.

To Jacob Pierson, of Wilmington, Del., for improvement in Seed Planters. Patented July 5, 1848

To Benjamin Hinkley, of Utica, N. Y., for improvement in Bedsteads. Patented July 5, 1848.

To Luther Tracey, of Concord, N. H., for improvement in Seraphines. Patented July 5, 1848.

To David Alter and Edward Gillespie, of Freeport, Penn., for improvements in the manufacture of Bromine. Patented July 5, 1848.

To Bradford G. N. Hathaway, of Rock Stream, N. Y. for improvement in Machines for threshing and cleaning Grain. Patented July 5, 1848.

To John F. Winslow and John Snider, of Troy, N. Y., Snider assignor to Winslow, for improvement in rolling Puddler's Balls. Patented in England October 14, 1847. In the United States July 5, 1848.

INVENTOR'S CLAIMS.

Grain Separators.

To Asa Smith, of Birmingham, Michigan. for improvement in Grain Separators. Patented 11th April, 1848. Claim —Having described my invention, what I claim therein as new and desire to secure by Letters Patent, are, first: I claim the revolving rake, constructed and operating as described, for shaking up and separating the straw and grain and carrying the straw through the machine. Secondly, I claim the motion of the screen in combination with that of the rake, its motion being pendulous and in reverse direction to that of the rake, as described.

Grain Driers.

To Elias Knaur, of Valley Forge, and Samuel Beaver, jr. of Great Valley, Penn., for improvement in Grain Driers. Patented 11th April, 1848. Claim.—What we claim as our invention, and desire to secure by Letters Patent, is a series of hollow frustrums of cones, having a common axis, and placed relatively, as herein described, for drying grain, so that the grain shall enter the centre and pass down through each one of the series, in the manner and for the purpose above set forth.

Rivet Machines.

To William Van Anden, of Trenton, N. J., for improvement in Rivet Machines. Patented May 2d, 1848. Claim.—What I claim as my invention and desire to secure by Letters Patent, is the adjustable eccentric or cam, for the purpose of increasing or decreasing the throw of the same, by means of a centre, that may be varied, and this in combination with the header, so as to make rivets with large or small heads, by such variations of throw of the eccentric. 2d, I claim the method of assorting the headed rivets from the unheaded pieces of metal, by means of an inclined trough and vibrating apron, constructed and operated in manner herein described and set forth.

Trimming Books.

To Leonard F. Markham, of Cambridgeport, Mass, for improvement in machinery for Trimming Books. Patented April 18th, 1848. Claim.—What I claim as my invention, is the turning and adjustable book-holder, in its combination with the reciprocating sliding cutter, and as arranged, constructed and made to operate therewith, substantially as above specified. And I also claim the adjustable frame in its combination with the turning book-holder, for the purpose and to operate therewith substantially as above set forth.

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NEW YORK, JULY 15, 1848.

Congress and Patent Rights.

We have received not a few communications lately, relative to the action of Congress in extending Patent Rights. All of these communications are from persons who have suffered from unjust taxation by agents of Woodworth's or Blanchard's patents. We have been requested in some instances to publish these letters, but have refrained from doing so because we believe that no good would be accomplished by their publication. An exhibition of wounded feeling or injured interest, is not exactly a theme to rouse public attention to existing evils. Facts—plain, unvarnished facts—" are the sturdy things that cannot be refuted." We cannot denounce Congress for extending patent rights. If the people send men there to pass laws that inflict punishment upon the people, who is to blame but those who send them? That there is great injustice done sometimes by Congress to inventors, especially by neglecting the Patent Office, is a well known and crying evil, but then whose fault is that? The people's. Why send men there that talk more and do more for party and personal interests, than for the advancement of science and the encouragement and protection of inventors and inventors' rights. One letter says, " it appears as if money can do any thing in our country and with our laws " We do not believe this.—We believe that moral principle is superior to wealth in its most potent form, in this country especially. It only wants an exhibition of moral power in our people upon any question to carry it to a triumphant consummation. Money no doubt may place barriers in the pathway of exact justice and right, but moral influence can remove all such barriers out of the way. Let our people then exert a moral influence upon those questions that affect their interests, and success *is* not problematical.

There are some important patent suits pending respecting Blanchard's patent. We will be able in a few weeks to give some information relative to the issue.

The Iron Mines of Nova Scotia.

There is perhaps no country in the world richer in the ores of the more useful metals, than Nova Scotia. Beds of the most valuable coal are found a few feet below the surface along with iron ore and limestone, the very requisites of a great iron manufacturing country. Possessing such valuable internal mineral resources and outwardly the best fishing ground in the world, it might well be supposed that this colony of Great Britain would be one of the brightest jewels in the British diadem, at least in proportion to its extent. It undoubtedly has the best natural resources of any of the British colonial provinces, and being so near to England, with a continued open navigation, she might, were not all the Ministries of England wretchedly ignorant of these things, be one of the best and most useful provinces under the British crown. That she is not so, is well known, not perhaps to the great blame of late governments, as to the heartless policy of previous ones The iron and coal mines of Nova Scotia would long since been famous in the eyes of the world, only that they were bartered away for the smile of a courtesan to the late *brave* Duke of York—whose *gallantry* was proverbial, as the inhabitants of Acadia know full well to their sorrow, or else her minerals would never have been made a present of to him to pay off his mistresses debts, and thus allowed to fall into the hands of a monopolizing company that has been a canker on the prosperity of that beautiful colony.

We are glad to perceive that the eyes of the Acadians are opening to the evils under which they have labored, but not like old Rip, do they perceive a new world around them—but they must make one. No doubt that time will come and England will endeavor to make amends for past evils.

We perceive that Robert Mushat, a man famous as an iron manufacturer and smelter, has lately brought into notice, through the columns of the London Railway Gazette, the superiority of the Nova Scotia iron and steel ores, and he asserts that they are superior to the Swedish or any other for the manufacture of steel. He says of Britain, " The opportunity now presents itself to shake off this dependance upon foreign nations for a supply of this essential commodity; and, from her own colony of Nova Scotia, England may, if she chooses, henceforth look for her supply of steel or steel-iron. From an examination of the samples of iron ore forwarded to me by the Londonderry Mining Company, I am enabled to pronounce that no ore of equal excellence has hitherto been discovered in the United Kingdom; nor have I met with any that will bear comparison with it from abroad; and this has recently been confirmed to my mind by a series of experiments, from which it has resulted, that cast-steel of the most perfect quality can be produced at once by simple fusion from this most remarkable iron ore. I am aware that this assertion may appear startling, and that it may excite a sneer among the veteran steel makers of Sheffield; but I am about to furnish the Londonderry Mining Company with samples of bar and cast steel, which shall not suffer by comparison with that prepared from the best Swedish marks; and I shall be happy to convince any doubting steel maker, by occular inspection, of the ease and facility with which the Londonderry ores can be, by *one process*, converted into cast-steel of first rate excellence, and this company possesses inexhaustible supplies of iron ore, whose quality is unrivalled. Coal, charcoal, limestone and building materials, are all in abundance on the spot—while the climate is temperate, and the facilities of transport very great. From the nature of the ore and from the results obtained in India from using hot blast in a charcoal furnace, I am very confident that 120 tons per week could be produced from a blast furnace 7 feet diameter at the boshes, and 24 to 28 feet in height, blown with heated air. Pig iron thus prepared, would take the precedence of the Scotch iron in the American markets; and it might, I believe, be manufactured at a cost considerably lower. For the purposes of steel making, the ore might either be at once converted into cast steel by fusion, or bar steel and cast steel might be manufactured from it by the ordinary methods. The mineral, called ankerite, in the Londonderry mines, is the celebrated spathose, or steel ore; and it may be observed that, in every locality where spathose iron ore—i. e. carbonate of protoxide of iron—is found, rich veins of lead ore invariably accompany it, and, in general, zinc and copper—the copper ore being in the state of carbonate, which is the most simple and favorable for the operation of smelting."

We are glad to call attention to this subject. We have a number of subscribers in Nova Scotia and New Brunswick, and as the time when the trade of this whole Continent will be reciprocal, is not far distant, the development of the resources of one part must be a benefit to all.

Mechanics.

When a mechanic, by his industry or skill, or by a fortunate combination of circumstances, which confer no honor on himself, emerges from obscurity and poverty, and rolls amid all the luxuries of uncounted wealth, he often seeks to forget his origin, in deference to the blind prejudices of society, and the dictates of a perverted and flattered heart, worse than cowardly, denies himself to his great family kindred, and turns up his pampered nose at the mere mention of a mechanic, the facts speak stronger than words. Why should mechanics, who combine and exhibit in their diversified range, the highest and most plastic energies of genius, on whose laborious, never-tiring skill, wealth and luxury depend, and to whose power pride is subservient to its swelling " pomp and circumstance," be treated as inferior beings among the mass of humanity? Merit should be the passport to society and consideration; and the state of society will be artificial and disordered until merit shall be thus respected. We will admit that the inferior estimation in which mechanics are regarded, is to some extent attributable to their own fault. They do not sufficiently respect themselves. They do not assert and properly defend their rights. Let them, as a class, bestow more attention on themselves—cultivate a greater dignity and polish of manners, and attend generally to those minor accomplishments which constitute, in the eye of a correct, not a sickly taste, the true gentleman. They will thus commend themselves as the representatives of that skill and genius which they exhibit in their various departments, and be respected as such delegates, unencumbered by factitious impediments. We think we see in the movements of the age a progressive tendency to their elevation. It is not the Agrarian principle of equality in spite of dollars and cents! It is founded on the recognition of the internal man, in whatever guise he may be found—the valuation of the jewel in the midst of repulsive incrustation—the discernment of the true ore, though deeply imbedded in the common earth. It is the test of equality to which the great Scottish poet alludes—

" The rank is but the guinea's stamp,
The man's the gold for a' that."

The operation of our democratic institutions is helping on this moral consummation. It is planting on every side free public libraries, and other means for the development and improvement of the mind and heart, and offering all facilities, in spite of the disparities of external advantages, to achieve an equality with the highest standards of mental and moral excellence. We say then to the mechanic, lift your eye to the standard, and keep it in view. Do your part in the movements of the day, and compel, by your efforts, the recognition of your just position.

Burning of a Railway Bridge.

The London Sun gives the following account of the burning of a Railway bridge, which was in the course of erection over the river Usk in Wales. The bridge was built of wood 400 yards long and was completely destroyed. The workmen engaged in completing the central arch, which was an immense pile, consisting of several tons weight of timber and iron bolts, were busy at work driving in the bolts when one man used a bolt which had been heated to an extraordinary degree. This immediately ignited the adjoining timber, which being highly kyanized or " pickled," was like gunpowder to ignite The man had a bucket of water at hand, as was always usual, but it was useless: for in less time than we have written the last five lines, the flames leaped along on each side from the centre to each end of the bridge, and the whole extent was in a terrible blaze in a moment. The men with difficulty escaped with their lives. A team of trains were passing at the time, with the horse put to their utmost gallop, were obliged to dash through the flames to escape.

The screams of those who saw the first terrible conflagration were awful. The whole town rushed to the great stone bridge adjacent, and hundreds of " navvies," carpenters masons, laborers, tradesmen, and gentlemen, were quickly on the spot; but it was of no avail. The town fire-engines were brought but they were syringes contrasted with the awful flames bursting from the surface of the piles, the rails, the arches, and in fact, wherever the fire could lay hold of wood to burn. The timber work was so enormous that it took a considerable time to burn any portion wholly away; while the patent composition used to preserve the wood lent assistance to the flames, which rose up with blue and black smoke, filling all the heavens. At about nine o'clock, the ponderous work of the central arch, having lost its abutments in the fire gave way with a terrible crash, and soon after this had fallen in, portion after portion gave way, until, with the exception of here and there a solitary black and charred fragment, with some portion on the banks, the whole of this magnificent work was wholly destroyed. The river was black with burning wood which fell into it; and the tide being receding, the banks became strewn with enormous pieces of half burnt wood, like the coast after a wreck. The bridge was almost completed, and cost upwards of $100,000 in the erection.

Bentz's Unbranning Machine.

As we have received a great number of communications respecting Mr. Bentz's Unbranning Machine, the following communication will at once satisfy the public, who are anxious to see a description of it published. It is well known that if an invention is published in any periodical prior to application for a patent in England, it will effectually preclude the granting of one. It is a contemptible and barbarous law, but while it is law, it must be complied with.

BOONSBORO, Md., June 30, 1848.

Messrs. Munn & Co.

GENTLEMEN.—On my return I found on my desk your esteemed favor of 25th inst., and contents noted. It would give me pleasure to give you the particulars of the " Unbranner," as you request, but I am debarred from doing so at this time, from the fact of just having taken steps to secure the patent in England and Colonies. You are probably aware that as soon as an invention is published in England it vitiates such patent there, and to have it published in your valuable paper would at once bring it before the British public, and give me some difficulty. As soon as I obtain my patent there (which will now be shortly,) it will give me pleasure to communicate through the Scientific American, all the facts connected with this subject, which I doubt not will be interesting to your numerous readers. I am very truly, yours, &c.

S. BENTZ.

Something of a Curiosity.

A short time ago, there was found at Kittanning, Armstrong, Co., Pa., a gun barrel, in the trunk of a hemlock tree, the barrel passing through the tree nearly horizontally, and almost grown in. The barrel was a little more than three feet in length. It had a square breech and fluted to the muzzle, which is also what is called 'bell-muzzled'—differing from any style of gun now in use, or which has been used within the recollection of the 'oldest inhabitant.' It had the appearance of being an elegantly finished article, its sights being gold, and breech pin pure silver. How it came there, and how long it has been there are the questions which elicit solution. It must have been lost or left there before the tree commenced its growth; but how long before, and by whom no one can tell or surmise. The age of the tree, judging from the number of grains in it, on either side of the heart, is 110 years, and yet, strange to say, the gun bore but very slight evidences of rust or decay. When found, the breech was just above the surface of the ground, and the muzzle slightly imbedded in the earth. It was loaded with a ball.

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Arts, Manufactures and Machinery.

Economy of Materials employed.—Mode of spreading ink on type.—Difference between printing by hand and by machinery.—Identity of work produced by the same machine.

The precision with which all operations by machinery are executed, and the exact similarity of the articles thus made, produce a degree of economy in the consumption of the raw material which is in some cases of great importance.

The earliest mode of cutting the trunk of a tree into planks, was by the use of the hatchet or the adze. It might, perhaps, be first split into three or four portions, and then each portion was reduced to a uniform thickness by those instruments. With such means the quantity of plank produced would probably not equal the quantity of the raw material wasted by the process, and, if the planks were thin, would certainly fall far short of it. An improved tool, the saw, completely reverses the case; in converting a tree into thick planks, it causes a waste of a very small fractional part; and even in reducing it to planks of only an inch in thickness, it does not waste more than an eighth of the raw material

The rapid improvements which have taken place in the printing press during the last twenty years, afford another instance of saving in the materials consumed, which is interesting from its connection with literature, and valuable because admitted, and well ascertained by measurement.

In the old method of inking type, by large hemispherical balls, stuffed and covered with leather, the printer, after taking a small portion of ink from the ink-block, was continually rolling them in various directions against each other, in order that a thin layer of ink might be uniformly spread over their surface. This he again transferred to the type by a kind of rolling action. In such a process, even admitting considerable skill in the operator, it could not fail to happen that a large quantity of ink should get near the edges of the balls, which, not being transferred to the type, became hard and useless, and was taken off in the form of a thick black crust. Another inconvenience also arose,—the quantity of ink spread on the block not being regulated by measure, and the number and direction of the transits of the inking balls over each other depending on the will of the operator and being irregular, it was impossible to place on the type a uniform layer of ink, of exactly the quantity sufficient for the impression. The introduction of cylindrical rollers of an elastic substance, formed by the mixture of glue and molasses, superseding the inking balls, and produced considerable saving in the consumption of ink:—but the most perfect economy was to be produced only by mechanism.

When Printing Presses moved by the power of steam were introduced, the action of these rollers was found well calculated to be performed by the Machine, and a reservoir of ink was formed from which one roller regularly abstracted a small quantity at each impression. From three to five other rollers spread this portion uniformly over the slab (by most ingenious contrivances varied in almost every kind of press,) and another travelling roller, having fed itself on the slab, passed and repassed over the type just previously to its giving the impression on the paper. The following is an account of the results of an accurate experiment made at one of our largest printing establishments. Two hundred reams of paper were printed off, the old method of inking with balls being employed; two hundred reams of the same paper, and for the same book, were then printed off in the presses which inked their own type.

The consumption of ink by the machine was to that by the balls as four to nine, or rather less than one half.

In order to show that this plan of inking puts the proper quantity of ink upon the type we must prove first that it is not too little:—this would soon have been discovered from the complaints of the Public and the Booksellers:—and, secondly,—that it is not too much. This latter point is satisfactorily established by a reference to the frequency of change of what is called "the set-off sheet" in the old method. A few hours after one side of a sheet of paper has been printed upon, the ink is sufficiently dry o allow it to receive the impression upon the other, and as considerable pressure is made use of, the tympan on which the side first printed is laid is guarded from soiling it by a sheet of paper called the set-off sheet. This paper receives in succession every sheet of the work to be printed, and acquires from them more or less of the ink, according to their dryness or the quantity upon them. It was usual in the former process, after about one hundered impressions, to change the set-off-sheet, which, in that time became too much soiled for further use. In the new method of printing by machinery no set-off sheet is used, but a blanket is employed as its substitute: this does not require changing above once in five thousand impressions, and instances, have occurred of its remaining sufficiently clean for twenty thousand. Here, then, is proof that the quantity of superfluous ink put upon the paper in Machine-printing is so small, that if multiplied by five thousand, and in some instances even by twenty thousand, it is only sufficient to render useless a single piece of clean cloth.

Nothing is more remarkable, and yet less unexpected, than the perfect identity of things manufactured by the same tool. If the top of a box is to be made to fit over the lower part, it may be done by gradually advancing the tool of the sliding rest, the proper degree of tightness between the box and its lid being found by trial. After this adjustment, if a thousand boxes are made, no additional care is required; the tool is always carried up to the stop, and each box will be equally adapted to every lid.

The same identity pervades all the arts of printing; the impressions from the same block, or the same copper plate, have a similarity which no labor could produce by hand. The minutest traces are transferred to all the impressions, and no omission can arise from the inattention or unskillfulness of the operator. The steel punch with which the card wadding for a fowling-piece is cut, if it once performs its office with accuracy, constantly reproduces the same exact circle.

Migration of Eels.

The curious were started the other day, (says the Banffshire, Scotland, Gazette,) by seeing a whole shoal of eels wending their way up the Deveron, to their summer retreats. The shoal was not less than 300 yards in length, was of considerable breadth and depth and was steadily passing upwards at the rate of a mile an hour. No obstacles seemed to retard its progress. The mill-lead was traversed and the waterfall ascended. This interesting phenomena is witnessed every year about the same time, and shoals of several miles in length are at times seen. It is thus explained:—At the beginning of winter the whole eel tribe descend from the upper parts of rivers, where the cold is most severe, to the mouth of the stream; where, amid the brackish water, they enjoy a less diminished temperature and deposit their spawn. From these spring the young fry, to whom the warm weather forms a signal to ascend the rivers; and in their upward progress they congregate in such shoals as that above mentioned.

The Indian and his Famishing Wife.

In the year 1762, (says the Rev. Mr. Heckwelder,) I was witness to a remarkable instance of the disposition of the Indians to indulge their wives. There was a famine in the land, and a sick Indian woman expressed a great desire for a mess of Indian corn. Her husband having heard that a trader at Lower Sandusky had a little, set off on horseback for that place, one hundred miles distant, and returned with as much corn as filled the crown of his hat, for which he gave his horse in exchange, and came home on foot bringing his saddle back with him.

Sickness.

The average sickness of human life has been computed at two years in every seventy or about ten days per annum. Before forty years of age, it is but half, but after that epoch it increases rapidly and in a continually progressing ratio, till the close of life.

Foreign Correspondence.

[The following letter of our Foreign Correspondent, although touching upon subjects which are somewhat different from the tenor of the Scientific American correspondence, will nevertheless be read with much interest, as being the opinions of a calm and sound thinker upon those subjects which are now agitating Europe.

GLASGOW, June 8, 1848.

Dear Sci.—The great facilities now afforded in transmitting intelligence across the Atlantic, will furnish you almost with a weekly arrival, every one of which must convince you of the rapid decline and overthrow of monarchy in the European world. This is an epoch in our planet's history, a data of subsequent results from present events, which is neither fanatical, nor assuming prophetic vision to forsee. The question remains unsolved, "What shall the end of these things be?" There is within the minds of the people both Europe and America, and over the civilized world, an inward anxiety to gain "a look into the future." The "divine right" of Kings, the unlimited control of the monarch over the civil and sacred rights of the people has now become nonplused, paralized and shaken, and without a proper recognition of the sovereignty of Deity, and the unseen power which governs the universe, men will seek in vain to trace in the momentous events of the nineteenth century the true character and tendency of the present contentions for civil and religious liberty. Many on the political platform imagine that they recognise the twilight, the morning dawn of universal freedom already spreading its dim rays over the world. Since the crown of France has fallen and monarchy been overthrown, the sagest of their men have been placed at the helm of the nation, but they cannot establish peace nor unite the commonwealth under a polity securing what they at first aimed at, the blessings of republicanism, as established in the United States. She wants the spirit of your Pilgrim Fathers, and the pious patriotism which inspired the signers of your Declaration of Independence. France rides likes a bark on the stormy main,—she has been delivered from monarchy, and placed under anarchy and tumult; strong suspicions are afloat regarding her principal revolutionary leaders and members of the provisional government, having aided and assisted in the late attempt to overthrow the present arrangements and create civil war The commercial and financial business is in a bad condition, and they have lost much of our country's sympathies in their present struggle, from the fact of their expelling our artists and mechanics from their country—unlike your own Republic. "a home for the oppressed of all nations." England, Scotland and Ireland, continue in the same agitated condition. The great aim of many of the leading Reformers is an entire separation between the three countries, though their course is represented in another form. The late restrictive enactments embodying prohibition against seditious meetings, have partly quieted political excitement in Glasgow, Edinburg, and other places, hitherto the scenes of mob-law and riot. Next to your own, we believe the British government to be the best in existence, had we a limited constitutional monarchy. But we must have reform, government must make concessions. It is not so much the want of Liberty, as it is the crushing debts, the heavy load of taxation, and sinecure pension list, which oppresses our people. But pacific means are more likely to rectify our wrongs, than physical insurrection and riot—that reform has been set about. Mr. Hume with nearly one hundred members of the Commons have come out in its support, leagued with masses of the most influential portion of the people. The points to be contended for are these, extension of the franchise, vote by ballot, and triennial parliaments. The age we live in is signalized for discovery, the world has been centralised by steam and electricity. But the great eternal Truth and religious freedom advances invincibly over the troubled nations, convulsed empires and crumbling monarchies. Christianity in its pristine purity and simplicity, begins to spread its reign, and has already planted her holy standards on many a land hitherto overruled by fraud and force. Our times are ominous of greater changes yet to be accomplished.

Trade in this country remains in the same depressed condition. Calico printing, cotton manufactures, machine makers, and all branches of trade are in a dead state. In Glasgow the number receiving Relief supply is 5237, principally workmen and their families out of employment, while the fund for supporting the same is nearly exhausted. There are great numbers leaving here every week for America, and thousands wish for means to carry them there. The condition of the working classes is truly deplorable.

Very truly yours, D. M. C.

The Clasp Coupling Joint.

Our readers will have perceived by our list of patents last week, that the patent for West & Thompson's Clasp Coupling Joint has been issued from our Patent Office. This mode of coupling pipes is the best ever discovered, as the following Report will abundantly testify.

OFFICE OF ENGINEER IN CHIEF.

March 28, 1848.

SIR.—Concerning the Clasp Coupling Joint of Messrs West & Thompson, which you have referred to us for our opinion, we have to report: That the design of the instrument is to effect a mechanical connection between the ends of pipes, the closing of cylinders and pumps, flanges, &c. &c. In its applications the following elements are presented:—

1st. It dispenses with brazing or soldering; the drilling of holes in flanges; the use of flange bolts, grummets and washers.

2d. It affords, compared with the ordinary joint, greater security with less material.

3d. It reduces the cost of packing, repairs and secures the material interposed between the faces of the flanges from being blown out.

4th. It enables a defective portion of a feed or blow-off pipe, to be cut out, and a new piece to be put in without involving the stopping of the attached engine or arrest of the operation of the attached boiler.

5th. It reduces the cost and weight from an ordinary joint from 50 to 75 per cent, and it occupies less space, which is an essential feature in its application to Naval purposes.

We are of opinion, therefore, that the combination of security, economy of cost, weight and space effected by this instrument, together with the facility of its repair and adjustment, render its use at the several Naval Stations, and on board of all public vessels, a matter of positive importance, and recommend the Bureau to take early steps to provide for the right of application of it, for the engines and boilers of the four steamers in progress of construction. Very respectfully,

C. H. HASWELL, Engineer in Chief. U S. N.
JOHN FARRON, jr. Chief Engineer, U. S. N.
W. SEWELLS, jr. Chief Engineer, U. S. N.
Commodore Chas. W. Skinner, Chief of Bureau of Construction, Equip't. and Repairs.

Lamartine's Remembrance of his Youth.

My mother received from her mother on her death-bed, a handsome bible of Royaumont, in which she taught me to read when I was a little child. That bible had engravings of sacred subjects on its leaves. When I had read half a page of the holy history through tolerably well, my mother would uncover the picture, and holding the volume open on her knees, would allow me to contemplate it, as my reward. The silvery, affectionate, solemn, and impassioned tones of her voice, added to all she said, an accent of force, of charm, and of love, which, till this moment rings in my ears, alas! after six years of silence.

Good Humor.

Let us cherish good humor and Christian cheerfulness. Let us endeavor to shake off that sullenness which makes us so uneasy to ourselves, and to all who are near to us. Pythagoras quelled the perturbations of his mind by the use of his harp; and David's music calmed the distraction of Saul, and banished the evil spirit from him. Anger, fretfulness, and peevishness prey upon the tender fibres of our frame, and injure our health.

A miser having heard a very eloquent charity sermon, exclaimed—"This sermon so strongly proves the duty of alms, that I have almost a mind to beg."

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TO CORRESPONDENTS.

"S. J. W. of Ala."—It will be two weeks before we can give you answer.

"L. V. P. of N. Y"—Your communication is too long for us to read. You will see how much and arduous the labor is to examine attentively such matter. Plainness and brevity is requested in every case

"J. A. A. of Mass."—Metals have been deposited from the ores more than four years ago.

"A. T. of Va,"—It is all very true that caloric acid will answer the same purpose as steam, but it will not be so cheap. That is our candid opinion.

"D. B. of Locust Grove, Ohio."—Your letter, accompanied with twenty five dollars, came safely to hand. We shall receive some copies of the Engineer's and Machinist's Assistant by next English steamer, and will forward one by Express. The money received is just sufficient to pay for the work.

"A. W. B. of R. I."—We cannot furnish you with the first numbers of volume 2, unless yon order the set complete.

"A. W. D. of Manchester, N. H."—We do not know the names of the patentees, but shall probably publish all the particulars very soon.

"J. W. K. of Va."—The English Registration Act allows only a superficial space of 24 by 15 inches for drawings and specification of every invention complex or simple. A foolish act indeed, but 'tis like the act nullifying a patent if published before granted. A wise man is uncle John.

"W. P. S. of Ohio."—We are not able to tell when Hult's application may be examined. It will not, in all probability, for two months yet. It will appear in our weekly list of patents.

"G. S. of Conn."—The overshot wheel 10 feet in diameter with 7 feet buckets, will be all of one-third more effective power than a breast wheel 12½ feet in diameter with 6 feet buckets. The exact difference we have not calculated, but if you have Scott, or Barlow, at hand, you might in a leisure hour make out the difference yourself.

"W. S. of Vt."—You will by this time have received our letter. We answered you and directed you to write to the Fulton Iron Foundry, South Boston, Mass.

"D. P. & J. M. of Mass"—We do not see how the waste of the collars can be applied for the rolls by any chemical operation. We would advise you to try a few collars of the Gutta Percha. We do not know positively that they would answer, but we think they would, and there is no waste, even old stuff can be manufactured over again. Gutta Percha would do well for pickers, only the atmosphere of the factory is too hot.

"G. V. of R. I."—You have not given us any description of your Wind Mill, and you will see that we are not able to judge relative to your question. But governors have been used, and there are Mills with self-acting sails, and Bywater's patent embraces the rolling up of the sails, or reefing, while the mill is in motion.

"O. B. of Ohio."—We can furnish you with the second volume, as advertized. The first we cannot furnish. There is no such work published, as you describe, in this country.

"E. B. M. of N. H."—It is not convenient for us to procure those cannon primers for you. We have credited the amount you sent towards your subscription as ordered.

"R. S. M. of N. Y."—The gimp and fringe machine covers five or six cords at once, and can be made to cover any number. You will hear more about it if you call at this office.

"S. T. H. of Pa. and M. A. of Pa."—Your communications have just been received. Also "P. & M. of Mass." and "H. J. B. of N. C."

"S. D. P. of Mass."—Your engraving was sent to you by Adams and Co's. Express, on the 10th.

"W. B. & L. A. B. of N. Y."—We cannot with propriety comply with your requests.

"J. B. G. of Ala."—Remit to us a dollar and order a copy of the Patent Laws for all countries, if you wish to know how to proceed to secure your invention by patent.

"P. M. of Marietta, Ga."—Dr. Smith's subscription expired with the last No. of the "Sci. American."

Patent Agency.

Applications for Patents made at this office, on the most reasonable terms. Neat drawings, specifications, and engravings of the first character, and cheaper than anywhere else. Notices of new inventions, Agency for the sale of Patent Rights, and all business of that nature, promptly attended to. Those who have patent rights to dispose of will find a good opportunity and field for their sale—such as Horse Power Machines and Waterwheels of every description. The largest circulation in the world for advertisements of inventions, &c.

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Address, post paid,

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jy15 109 Nassan st., N Y.

LAW'S STAVE DRESSER AND JOINTER.

The undersigned has perfected and put into very successful operation his Stave Machine.

It will **Dress** and **Joint** Staves of all shapes, kinds and dimensions, and of promiscuous widths, as they come from a mixed pile, at the rate of from 6 to 8 staves per minute, finishing them, before they leave the machine, ready for the truss hoop. They are both dressed and jointed very smoothly and handsomely, bringing each stave of equal width at the two ends without waste of stock and perfectly to correspond with every twist or crook, and with as little power in proportion to the work done, as any other machine.

For rights (which are indisputable,) or machines, address, post paid.

H. LAW, Wilmington, N. C.

N. B A machine will be in operation in New York or vicinity, in the course of the ensuing month.
jy15 2m

NOTICE.

I have made application for a patent on a machine for turning irregular forms, such as lasts. spokes, &c.: this is to notify all persons who infringe on said machine or right, by making or using, or otherwise, that they will be dealt with according to law.

ALLEN GOODMAN.
Dana, Mass., July 3, 1848. jy8 4t*

Agricultural Implements.

☞ Inventors and Manufacturers of superior Agricultural Impiements may find customers for their goods by applying at the Agricultural Warehouse of S. C. HILLS & CO. 43 Fulton st. m8

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FOR THE
New York Weekly Sun,
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The obstacles arising from the construction of the "Lightning Presses" upon which The Weekly Sun is printed having been overcome, the customary engravings will hereafter appear regularly.

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THE CONTENTS

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The Subscriber will furnish Cotton Manufacturers with his improved Cotton Willow. The fact of its being introduced into most of the best mills in New England is the best proof of its excellence. It is extremely simple in its construction and will do more and better work with a less expenditure of power than any other Willow; it prepares the cotton so much better than any other that there is much less power and repairs needed on the succeeding machinery. It is as safe from fire as a Card, and its form and action are such as to draw all the flyings and dirt from the journals; it will convey the cotton to any desirable distance short of 250 feet. It can be placed in the basement of a mill or other place nearly worthless for other manufacturing purposes, and will blow the cotton into the rooms above. All necessary information given for placing and operating the machine in any peculiar or difficult situation. EDMUND BACON,

Superintendent Quinebaug Manufacturing Co.
j24 tf Norwich, Conn.

Ballard's Improved Jack Screw.

PATENTED.

The advantages of this Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires,

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler makers have them in use, by whom they are highly recommended.

JACK SCREWS,

Of various sizes, power and price, constantly on hand at the manufactory,

No. 7 Eldridge street, near Division.
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TAFT'S PREMIUM LETTER COPYING PRESS.

The Subscriber continues to manufacture his Premium Letter Presses, at Worcester, Mass., and respectfully informs his friends and the trade generally, that he keeps constantly on hand a large assortment, which he offers for sale at reduced prices. Orders by mail will be promptly attended to

GEO. C. TAFT,
Worcester, Mass., April 11, 1848. a22 3m

Stave Dressing Machine.

The undersigned are manufacturing and have now in operation, a machine for **Dressing Rived Staves,** which will dress 126 hogshead or 170 barrel staves per hour, with one horse power, and with two horses will double the number.

It will dress crooked and winding staves to perfection, and leave the full thickness on those with thin edge, a desideratum worthy of attention.

The machine is simple, compact and durable, and has received the approval of every practical Cooper that has witnessed its operations. We warrant it to perform fully equal to our representation and shall be pleased to exhibit it to all who may favor us with a call. For further description and terms, apply to

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j3 3m*

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These Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

Johnson's Improved Shingle Machine.

The Subscriber having received Letter Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

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Woodstock, Vt., April 17, 1848. a22 3m*

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CLINTON G. GILROY,

Author of the "Practical Treatise on Dyeing and Calico Printing," "Pastoral Life and Manufactures of the Ancients," "Wonders of Nature and Art," &c. Messrs. Harper & Brothers, the publishers of the two first named works have already paid us nearly $3,000 on the copyrights. jy1 3m*

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Consulting Engineers and Counsellors for Patentees.

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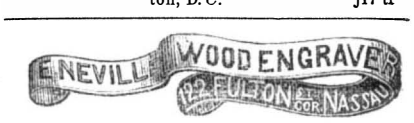

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To Mill Owners.

Haviland & Tuttle's Patent Centre Vent Pressure Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recently held in New York and a diploma at the Mechanics' Fair in Boston.

The wheels are manufactured and for sale by the FULTON IRON FOUNDRY CO., South Boston, Mass.,—where the wheels can be seen and any information cencerning them had.

Patent Rights for different States, Counties, &c. for sale, as above. m25 6m*

Machinery.

Persons residing in any part of the United States who are in want of Machines Engines, Lathes, or any description of machinery, can have their orders promptly executed by addressing the Publishers of this paper. From an extensive acquaintance among the principal machinists and a long acperience in mechanical matters they have uncommon facilities for the selection of the best machinery and will faithfully attend to any business entrusted to their care MUNN & CO. a15

Important to the Public.

It must not only be important, but interesting to the public to know at what establishment in New York Hats or Caps of the best quality and latest style can be purchased at the cheapest price The place is Knox's, where may be found every variety of a Hat from a shilling Palm Leaf to a Five Dollar Beaver, or a Cap from a two shilling oil cloth to a beautiful new style cloth for $1.50.

Knox's is the place—128 Fulton street. m20 3m

TALBOT'S PATENT REVOLVING BLIND HINGE.

Important to Builders and others.

These Hinges are for opening, closing, locking and completely regulating the blind upon the interior of the house without raising the sash. They are adapted to any kind of house, or style of finish. All communications, whether for the purchase of the article, or of Town, County or State rights, addressed to the subscriber, or to J. W. Ingell & Co., Taunton, Mass., will be promptly and satisfactorily attended to.

j3 tf L. T. TALBOT, Taunton, Mass

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For the Scientific American.

Royal Blue.

This is a color which for beauty is unequalled. The true *modus operandi* is not known to many and in no published work can we find a proper description of the dyeing of it. It is but a few years since it was introduced into this country from England, and the receipts for dyeing it have been sold at from five to twenty five dollars. There are two ways of dyeing dark shades, first by *bottoming*, as it is technically termed, with logwood and then dyeing with the prussiate of potass, or first dyeing with the prussiate and then topping with the logwood. The latter mode is the best.

For a dark blue the goods do not require to be pertectly white, as the operation strips off old colors, while the blue is gradually becoming combined with the goods. To every pound of Circassian or merino goods, which must be perfectly washed and clean, two ounces of the prussiate of potass is put into the dye kettle along with two ounces of tartar, and nitric and sulphuric acid added until the liquor (after the tartar and prussiate is dissolved) tastes like glauber salts. The goods are then entered, if in pieces they must be well selvaged or winched, and if yarn well turned, and the liquor in the dye kettle gradually brought up to the boiling point. The goods are then taken out and a little more sulphuric acid added. After the goods are boiled for twenty minutes or half an hour, a beautiful and rich sky blue will have been imparted to them. They are then taken out of the dye kettle, washed and hung up for a few moments to drip. Another dye kettle with a small quantity of logwood liquor, (say a teacup full of strength No. 3 in the hydrometer, for every pound of goods,) should be now boiling, to which add a wine glass full of the muriate of tin, stir well and enter the goods. The kettle must be kept boiling for half an hour, when it will be found that a deep velvety richness will be imparted to the blue color, and by adding a greater quantity of logwood with a proportional quantity of spirits (muriate of tin) a deep violet color will be the result. If cochineal is used instead of logwood, a clear and beautiful crimson tinge is imparted to the goods. This color may almost be considered permanent—it at least occupies more than a middle place in the scale, between the fugitive and permanent. From its exceeding clear and rich appearance, this color on goods has received the name of *royal blue*. The stuffs that are employed to dye it are nearly colorless, but their combination forms a salt which is deposited or combined with the woolen goods by means of electricity elicited in the process, and enters minutely into all the fine pores of the goods, and the salt so formed reflects the prismatic blue color.—Electricity is the prime agent of the dyer and calico printer. For nearly three thousand years the effects of mordaunts have been well known to produce various shades with a single drug. Madder with different mordaunts will produce a bright red, or a deep black—a lilac or a purple. But no theory explanative of these chemical manipulations, that we are aware of, has ever been set forth to reconcile the art of dyeing with the Newtonian theory, only so far as it relates to prismatic reflection—the decomposition and mingling of the different rays. "That colors produced on goods in the process of dyeing, is the result of electric action—a decomposition in the first place, and a deposition in the second—whereby certain salts are deposited on certain animal or vegetable substances to reflect certain *prismatic shades*," is a theory which we are not aware of ever having seen set forth in any treatise, either by Field, Crum or Thompson, the latter the best writer on the subject in this country, and the fame of Walter Crum as a chemist and dyer, is world wide. The royal blue is a color which at once establishes this theory—the process is like a deposition of metals in their cyanides by the galvanic battery. This theory is backed up by the whole process of steam colors in calico printing, and by Bain's electric telegraph. Electricity is always developed rapidly in steam and the dye kettle is the galvanic battery of the dyer.

To those who have little interest in the abstruse part of this article, we would say that coarse goods dyed by the above receipt, may be made a very deep blue by the greater quantity of logwood used, and if the goods were first of all prepared with a small quantity of the sulphate of iron—so much the better.—The above receipt could not be purchased for less than five dollars from any dyer, and any person may dye the color perfectly by following our description. As we have advanced a theory different from any that we have ever seen, and as we have much yet to say to explain it fully and establish it, we shall do so in a separate article next week.

R. Bartholomew.

For the Scientific American.

Some Properties of Carbon.

Carbon has many properties which are already well known, but every day developes some more interesting phenomena. It makes a constant electric battery if buried with plates of zinc, and the beautiful incandescence of charcoal points is well known.

When a piece of ignited charcoal, clear and free from ash, is dipped into a solution of a metallic salt, it reduces the metallic salt and the metal is deposited with all its brilliancey upon the charcoal. The salts of tin, copper, platina, silver and gold furnish in this manner brilliant deposits. When the salts, however, are too much acidulated or concentrated, this effect is not produced. The sulphate of copper must be made very weak, and they will form upon the charcoal beautiful deposits of various colors, from the finest sky blue to that of red. Some metals choose to deposit themselves upon the points while others cover all the surface of the charcoal. Protochloride of tin appears in brilliant crystals all around the charcoal. These facts are interesting and will no doubt yet lead to more valuable discoveries. R. B.

Obtaining White Outlines from any kind of Paper.

Dissolve 20 grains of silver in pure nitric acid two parts and distilled water one part, and heat the mixture so as to induce chemical action. Hold then over the vapor a design placed on a white sheet of paper, and then expose to the light. The uncovered part will assume a dark hue and on removing the design, the latter will be found reproduced with the utmost fidelity. One may thus obtain 700 or 800 sheets. The nitrate of silver carried up by the vapor becomes attached to the uncovered portions of the paper and is afterwards colored by the sunlight. The expense is but small,

Substitute for Glass for Electrical Machines.

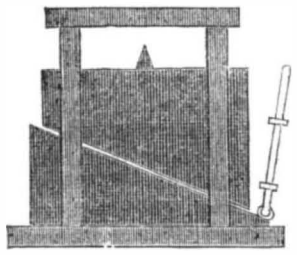
Cut strong mill pasteboard of a circular form and smoothed at the edges upon which successive layers of shellac are laid until it has become of the proper thickness—each layer being allowed to become perfectly dry before the other is applied. The shellac should be dissolved in wood naphtha or pyroligneous acid, without heat and applied with a brush. By this means a perfectly smooth surface will be obtained. Shellac being the best nonconductor of electricity, is certainly the best substance for producing it. The shocks from it are short but follow in quick succession, and give more pain to the knuckles when held to them than a glass machine. This is cheaper than glass, and fully as strong. The best plan is to have two plates on the same axle as a far greater increase of power in the same space, is thus obtained, than by the single plate.

Cream.

If cream, well wrapped in a cloth, is put into a hole in damp earth and left there for about twenty four hours, it will become clarified and turn into a substance neither butter nor cream, but which combines the qualities of both and has a very delicate and agreeable taste, provided the cream used is sweet and good.

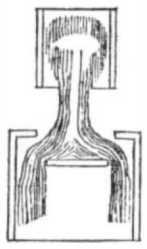
MECHANICAL MOVEMENTS.

Horizontal and Perpendicular Motion.



The above cut represents an arrangement in which the horizontal motion of the upper wedge is converted into perpendicular motion in the small triangular piece placed upon it, which must necessarily be elevated as the wedge is forced forward.

Water Pressure.



This cut represents a section of the oscillating column, for the purpose of elevating a given fall of water above the level of the reservoir or head, by means of a machine, all the parts of which are absolutely fixed. It consists of an upper or smaller tube which is constantly supplied with water, and the lower or larger tube constructed with a circular plate in the centre of the orifice, which receives the stream from the tube above. Upon allowing the water to descend it forms itself gradually into a cone on the circular plate which protudes into the smaller tube, so as to stop the flow of water downwards, and the regular supply continuing from above, the column in the upper tube rises until the cone on the circular plate gives way; this action is renewed periodically, and is regulated by the supply of water.

Bronzing Different Metals.

M. de Ruolz communicated to the Academy of Science and Art at Paris, in 1841, a process by which he bronzed several metals; that is, he deposited upon them, by the aid of the galvanic battery, layers more or less thin, of brass or bronze This process, which required the use of the alkaline double cyanides of copper and tin, was not adopted in practice, either on account of the high price of the cyanides, or from some other reason.

M. M. Brunel, Bisson and Gaugain have substituted for the cyanides a solution in water of 500 parts of carbonate of potassa; 20 do of chloride of copper; 40 do sulphate of copper; 40 do sulphate of zinc, and 250 do nitrate of ammonia. For bronze, a salt of tin is substituted for the sulphate of zinc.

By means of this solution, cast and wrought iron, steel, lead zinc, tin, and other alloys of these metals either with each other, or with bismuth or antimony, may be easily covered with brass or bronze, after a previous cleaning depending upon the nature of the metal.

The operation is performed cold: the piece to be covered is put into connection with the negative pole of a Bunsen (carbon) battery, taking for the positive decomposing pole, a plate of brass or bronze.

When it is desired to cover large surfaces, experiment has shown that the number, and not the size of the couples must be increased.

When the pieces are coated, and have been colored, as is usual in the arts, they rival the most beautiful bronzes. A very beautiful appearance may be given to the coarsest of iron castings.

Pieces thus covered do not oxidise in the house. Those which are designed to be placed out of doors must be varnished as usual.

This new process, which has been communicated to the Academy in Paris must be valuable to the Arts, and deserves attention and encouragement It will be useful in the bronzing of armor and machinery and may be applied to a thousand various productions of art, making them more beautiful and permanent.

Curious Effect of Violet Rays upon the Electric Telegraph.

It is not perhaps generally known, that if a ray of light of a violet color, enter through a window in the neighborhood of a telegraph needle, magnetism is immediately imparted. We understand that the scientific world is indebted to Mrs Somerville for discovery of the fact that a magnet may be made by the agency of a ray of violet, probably from the orbit of the fair experimenter's own blue eyes, but in reality, Mrs. Somerville has succeeded in converting a common sewing-needle, by a simple process into a magnet by the agency of a ray of violet. Professor Morse has also given attention to the subject. Finding that his telegraphic needles were frequently out of order, from the effect of particular rays of light, he placed before them, in order to neutralize it, a sheet of yellow glass, in front of the apparatus, which does not permit the violet rays to pass, and this he has found to have the desired effect.

Double Gilliflowers.

Ladies and others who cultivate flowers, are always pleased when they obtain a handsome double flowering gilliflower. We find in Hovey's Magazine for June, an extract from a European magazine, showing how M. Louis Mullet saves seeds that will always produce double flowers. Choose only those pods which are attached to the flower stem at the same height, that is to say, opposite each other or in whirls of three or four. The seeds which these opposing pods contain will produce plants bearing double flowers, while those placed alternately on the flower stem, one above the other, in the natural way, generally contain those which will bring single flowers.

Railway and Telegraph.

The Telegraph posts in England are arranged along the railway, 30 to a mile, and they calculate the speed of the train in the following manner. Multiply by two the number of telegraph posts you pass in a minute, by four those you pass in half a minute, or by eight those you pass in a quarter of a minute, and the result, in each case, will be the number of miles you are then travelling per hour.

Beautiful Gutta Percha Composition.

Gutta Percha three parts, bone dust one part and pipe clay half a part. This makes a beautiful composition for mouldings, &c.

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